

The Effect of Psycho-Educational Program on the Beliefs and Attitudes of Primary School Teachers toward Epilepsy in Children in Kirkuk city

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Abstract

Background: Childhood epilepsy seems to be the most prevalent and long-lasting neurological disorder in children and it is associated with serious psychosocial issues, particularly when seizures occur at school, loss of school hours and possible effect of seizure itself on cognitive function. **Objective:** The aims of this study are to examine the effect of the Psycho-educational program on teachers' beliefs and attitudes toward epilepsy in children. **Methodology:** A quasi-experimental, descriptive study "self-controlled design" has been carried out at primary schools for teachers in Kirkuk City from the period 24th October 2020 to 30th May 2022. A non-probability "Convenient sample" had been consisted of (80) primary schools' teachers, (40) teachers for study group and (40) teachers for control group. Throughout the application of pre-test for both groups and post-test approach (post 1, and post- 2) and implementation of psycho-educational program only on (study group). The program and instruments are constructed and developed by the researcher to measure the purpose of the study. **Results:** The majority of the studied group according to age group is between (40-49 years), most of studied sample was female, graduation from teachers preparing institution, most of studied subjects were married, having more than 16 years of experience as a school teacher, and most of studied subjects were from urban residency. All of them hadn't any participated previously in a training course about epilepsy. **Conclusions:** According to the study's findings, the most of primary school teachers hold negative attitudes and beliefs before implementation of the psycho-educational program; and significant improvements as a result of major changes in beliefs and attitudes levels after application of a psycho-educational program; with regard to post-test period, there was no significant relationship between teachers' beliefs and attitudes toward children with epilepsy and socio-demographic characteristics were chosen. **Recommendations:** The study recommends that psycho-educational program should be design on beliefs and attitudes for all teachers in governmental and non – governmental schools in Kirkuk governorate regarding epilepsy in children.

Keywords: Epilepsy, Psycho-Educational Program, Beliefs, Attitudes, Primary School Teachers

1. Introduction

Childhood epilepsy is the most common and chronic neurological illness in children and it is associated with serious psychosocial issues, particularly when seizures occur at school, loss of school hours and possible effect of seizure itself on cognitive function. It is highly surrounded by stigma and prejudice, which results in negative attitude towards the illness. Stigma and discrimination are still exacerbated by a lack of knowledge and incorrect beliefs. Historically, Epilepsy was once thought to be a scared disease caused by a god's invasion of the body; it was supposed that only God could take a healthy man's senses away, fling him to the ground, convulse him, and then quickly restore his awareness. In the developing countries most people have a believe that epilepsy is infectious and that it is

transmitted through saliva, urine, flatus, and feces are expelled during a convulsion.

People with epilepsy have been marginalized, stigmatized, and misunderstood in large part because of this idea [1]. Epilepsy term is derived from the Greek word (Epilambavian) which meaning to grasp, or to take hold of. It is a symptom complex that arises from abnormal brain function, which can be caused by a number of pathologic processes. Epilepsy has indeed been documented since at least 4000 BC. It's considered as a non-contagious neurological condition caused by a group of brain cells exploding with excessive electrical discharges [2].

The National Institute of Neurological Disorders and Stroke (2022) described it as a chronic neurological illness characterized by clusters of nerve cells, or neurons, in the brain that occasionally indicate abnormalities and result in seizures [3]. Epilepsy is

considered the second most prevalent central nervous system condition; affecting 65 million people globally [4]. In 60% of cases, epilepsy begins in childhood, and the majority of the clinically relevant elements of the condition occur during childhood [5]. According to Sudanese studies, 10% of children with epilepsy have attention deficit hyperactivity disorder (ADHD) [6].

The annual incidence rates of epilepsy differ by country. Annual incidence rate in Norway is 11 per 100,000, 33 per 100,000 in Italy, and 48 per 100,000 in United Kingdom. The highest incidence rates have been seen in developing country populations, ranging from 140 to 230 per 100,000 per year [7]. Data from Arab countries found prevalence rates of 0.9 per 1000 in Sudan, 2.3 per 1000 in Libya, and 6.5 per 1000 in Saudi Arabia [8].

Regardless of cultural and geographical differences, beliefs concerning the causes of epilepsy may be divided into four categories: retribution for sin, bewitchment or possession, a communicable sickness, and/or a brain condition. Teachers in schools serve as crucial role models for students and have a long-term impact. Teachers' attitudes may have an impact on children's academic achievement, especially those with epilepsy. Teachers' epilepsy attitude, knowledge, and beliefs were found to have an instant influence on learning outcomes among epileptic students, development of social skills, also making friends [9]. If teachers discriminate against children with epilepsy at school, it will have a severe impact on their life in the future and vice versa.

2. Methodology

Design of the Study

The present study is carried out at primary schools in Kirkuk city; which performed by using Self-Controlled Design throughout the application of pre-test for both groups and post-test approach (post-test 1, and post-test 2) and implementation of psycho-educational program only on (study group) primary school teachers toward epilepsy in children, which extends from 24th October 2020 to 30th May 2022. A non-probability "Convenient sample" had been consisted of (80) primary schools' teachers, have been selected to obtained represent and accurate data. The data are collected through the (self-administered) interview with the study sample. The study group was exposed to the psycho-educational program, while the control group was not.

Study instruments

- **Socio-demographic characteristics**
Assessment of the subject's characteristics that include (8) items about primary school teachers' which include: age, gender, educational level, and marital status, years of experience as a school teacher, residential area, school name.
- **General information of teacher regarding epilepsy**

This part consists of (3) items which include: Do you have any information regarding epilepsy, have you participated in a training course on epilepsy, Have Epileptic children in your school.

- **Specific information of teacher regarding epilepsy**

This part consists of (6) items which include: Have you ever seen epileptic seizure; Did you teach an epileptic student; Have you given a first aid for student during epilepsy attack or a fit; Do you have enough information about epilepsy; Do you think need to learn first aid for an epileptic seizure; and do you need to learn about epilepsy?

- **Adult Version of the Epilepsy Beliefs and Attitudes Scale (EBAS)**

[10] this questionnaire was developed to assess teachers' beliefs and attitudes regarding epileptic children. This part includes (41) items as follows:

There are three subscales in the 41 items: neurological, metaphysical, and environmental/psycho. There are fifteen statements—items—on the neurological subscale. 1, 5, 7, 8, 11, 13, 14, 15, 19, 20, 21, 22, 23, 27, and 35; the metaphysical subscale contains four items—items 2, 3, 18, and 39; the environmental/psychological scale consists of twenty two statements—items 4, 6, 9, 10, 12, 16, 17, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 36, 37, 38, 40, and 41 (Zanni, Matsukura and Maia, 2009). Researcher adopted translation for the study scales (EBAS); some modifications are needed to complete the study instrument as the experts' suggestions. The items were chosen for their ability to express these ideas in the target group after the scale was adjusted to Iraqi culture.

- **The Construction of the Education programs**

The most important part in the present study is the program because it measures the information of the teachers and shows the researcher how to meets the needs of teachers toward epilepsy in children. The psycho-educational program was designed using data gathered from prior studies and a review of the relevant scientific literature. The program is implemented throughout five sessions to discuss and explore the major domains of the program; each session of the program is designed and scheduled to be for (1) hour. One lecture every day from Sunday to Thursday. The lectures were given electronically because teachers were not allowed to attend the lectures because of COVID-19.

3. Results

Table (1) illustrates the studied groups, primary school teachers with regard to the type of school, it consist of regular school 40(50%) and special education 40(50%), most of teacher's age group in the study and control groups is between (40-49) years and constitute study group 24 (60%) and control group 18 (45%) respectively, Respect to the gender variable refers that female are more than

male and constitute 26 (65%) and 29 (72.5%) of teachers in the study and controlled groups respectively, the most of them graduated from teacher preparing institution and they are accounted 25 (62.5%), and 26 (65%) in the study and controlled groups respectively, that married subjects has recorded the highest percentage are accounted that 29 (72.5%), and 35 (87.5%) in the study and

controlled groups respectively. the most of them has more than 16 years' experience as a school teacher 28 (70%) and 26 (65%) are accounted in the study & controlled groups respectively, and most of studied subjects were from urban residency.

Table 1: Distribution of the Study Sample According to the Socio- Demographical Characteristic

Variables	Group Classes	Study		Control		C.C	P. value	C.S
		No.	%	No.	%			
Type of School	Special School	20	50	20	50	0.000	1.000	NS
	Regular School	20	50	20	50			
Age	20 – 29	3	7.5	4	10	0.155	0.580	NS
	30 – 39	7	17.5	11	27.5			
	40 – 49	24	60	18	45			
	50 – 59	6	15	7	17.5			
Gender	Male	14	35	11	27.5	0.081	0.469	NS
	Female	26	65	29	72.5			
Level of Education	Teacher Preparing Institution	25	62.5	26	65	0.026	0.816	NS
	Bachelor's degree	15	37.5	14	35			
Marital status	Single	6	15	5	12.5	0.257	0.130	NS
	Married	29	72.5	35	87.5			
	Divorced	2	5	0	0			
	Widowed	3	7.5	0	0			
Years of experience as a school teacher	1 - 5 years	1	2.5	3	7.5	0.202	0.333	NS
	6 - 10 years	1	2.5	4	10			
	11 - 15 years	10	25	7	17.5			
	> 16 years	28	70	26	65			
Residency	Urban	37	92.5	40	100	0.194	0.077	NS
	Rural	3	7.50	0	0			

Table 2: Distribution of studied groups (n=80) for the general information variables toward epilepsy in children

General information	Group Classes	Study		Control		C.C	P. value	C.S
		No.	%	No.	%			
Having information regarding epilepsy	No	9	22.5	17	42.5	0.209	0.056	NS
	Yes	31	77.5	23	57.5			
If yes: What is the main source of information about Epilepsy?	Mass Media	14	45.2	8	34.8	0.177	0.783	NS
	University Teaching	5	16.1	3	13.0			
	Family & Relatives	4	12.9	5	21.7			
	Friends	5	16.1	3	13.0			
	Written Materials	3	9.7	4	17.4			
Participated in a training course on epilepsy?	No	40	100	40	100	--	--	--
	Yes	0	0	0	0			
Have Epileptic children in school?	No	31	77.5	29	72.5	0.058	0.606	NS
	Yes	9	22.5	11	27.5			

The table (2) shows that the most of the studied sample were having information toward epilepsy 31(77.5%) and 23(57.5%) are accounted in the study & controlled groups respectively, most of them answered the mass media is the main source of obtained information about epilepsy 14(45.2%) and 8(34.8%) are accounted in the study & controlled groups respectively, the most of them hadn't participated previously in training course regarding epilepsy 40(100%) and 40 (100%) are accounted in the study & controlled groups respectively, also most of them confirmed there is none exist of epileptic child in the school 31(77.5%) and 29(72.5%) are accounted in the study & controlled groups

respectively. The table (3) presents item related to teachers specific information toward epilepsy in children of studied subjects shows that the most of them recorded hadn't seen epileptic seizure 24(60%), and 25(62.5%) are accounted in the study & controlled groups respectively, the most of them was teaching an epileptic student in the school 32(80%), and 26(65%) are accounted in the study & controlled groups respectively, and most of them were not given a first aid for students during attack or fit 29(72.5%), and 31(77.5%) are accounted in the study & controlled groups respectively, also the most of them had enough information regarding epilepsy 24(60%) and 21(52.5%) is accounted in the study &

controlled groups respectively.

Table 3: Distribution of studied groups (n=80) for the specific information variables toward epilepsy in children

Specific information	Group		Study		Control		C.C	P. value	C.S
	Classes	No.	%	No.	%				
Ever seen epileptic seizure?	No	24	60	25	62.5	0.026	0.818	NS	
	Yes	16	40	15	37.5				
Teach an epileptic student?	No	8	20	14	35	0.166	0.133	NS	
	Yes	32	80	26	65				
Given a first aid for student during epilepsy attack or a fit?	No	29	72.5	31	77.5	0.058	0.606	NS	
	Yes	11	27.5	9	22.5				
Have enough information about epilepsy?	No	16	40	19	47.5	0.075	0.499	NS	
	Yes	24	60	21	52.5				
Need to learn first aid for an epileptic seizure?	No	11	27.5	13	32.5	0.054	0.626	NS	
	Yes	29	72.5	27	67.5				
Need to learn about epilepsy?	No	8	20	9	22.5	0.031	0.785	NS	
	Yes	32	80	31	77.5				

Table 4: Descriptive statistics for (Epilepsy's Neurological Domain) questionnaire's items for studied periods of study group (n=40)

Teacher Attitudes toward Children with Epilepsy's Questionnaire's items	Periods	Study Group							
		MS	SD	RS%	Ass.	Comb.	Z-value	P-value	C.S
1. Epilepsy is caused by a genetic defect.	Pre	1.75	0.44	43.75	L	1X2	-5.521	0.000	HS
	Post1	3.50	0.60	87.50	H	1X3	-5.498	0.000	HS
	Post2	3.38	0.59	84.50	H	2X3	-2.236	0.025	S
2. Children can get epilepsy as a result of a medical condition such as (measles, malaria, high fever, meningitis, as well as other).	Pre	1.77	0.53	44.25	L	1X2	-5.181	0.000	HS
	Post1	2.83	0.64	70.75	M	1X3	-4.710	0.000	HS
	Post2	2.70	0.56	67.50	M	2X3	-1.387	0.166	NS
3. Seizure medication should only be used when an epileptic child is suffering a seizure.	Pre	2.97	0.58	74.25	M	1X2	-5.443	0.000	HS
	Post1	1.53	0.64	38.25	H	1X3	-5.219	0.000	HS
	Post2	1.65	0.70	41.25	H	2X3	-1.291	0.197	NS
4. Epilepsy does not have a definitive cure.	Pre	3.35	0.83	83.75	L	1X2	-5.435	0.000	HS
	Post1	1.35	0.53	33.75	H	1X3	-5.386	0.000	HS
	Post2	1.50	0.55	37.50	H	2X3	-2.121	0.034	S
5. The seizures of an epileptic child are caused by mood swings.	Pre	1.87	0.61	46.75	L	1X2	-5.655	0.000	HS
	Post1	3.72	0.51	93.00	H	1X3	-5.568	0.000	HS
	Post2	3.53	0.55	88.25	H	2X3	-2.309	0.021	S
6. Epilepsy is transmitted from parents (father or mother) to offspring	Pre	3.02	0.62	75.50	H	1X2	-1.177	0.239	NS
	Post1	3.17	0.59	79.25	H	1X3	-0.408	0.683	NS
	Post2	3.08	0.57	77.00	H	2X3	-1.414	0.157	NS
7. A child's epilepsy can be caused by a birth trauma.	Pre	1.40	0.59	35.00	L	1X2	-5.394	0.000	HS
	Post1	3.45	0.71	86.25	H	1X3	-5.578	0.000	HS
	Post2	3.33	0.62	83.25	H	2X3	-1.213	0.225	NS
8. Epilepsy can make a child appear confused.	Pre	2.98	0.66	74.50	M	1X2	-4.000	0.000	HS
	Post1	3.65	0.53	91.25	H	1X3	-2.676	0.007	HS
	Post2	3.40	0.59	85.00	H	2X3	-2.887	0.004	HS
9. An anomaly in the brain may be the cause of epilepsy in a child.	Pre	3.03	0.58	75.75	H	1X2	-4.100	0.000	HS
	Post1	3.70	0.46	92.50	H	1X3	-2.438	0.015	S
	Post2	3.40	0.63	85.00	H	2X3	-3.464	0.001	HS
10. Epilepsy is a mental illness.	Pre	3.03	0.58	75.75	L	1X2	-5.549	0.000	HS
	Post1	1.23	0.42	30.75	H	1X3	-5.261	0.000	HS
	Post2	1.53	0.60	38.25	H	2X3	-2.449	0.014	S
11. Nobody actually knows what causes epilepsy in children.	Pre	1.95	0.64	48.75	H	1X2	-4.405	0.000	HS
	Post1	1.20	0.41	30.00	H	1X3	-3.421	0.001	HS
	Post2	1.43	0.55	35.75	H	2X3	-1.964	0.049	S
12. In epileptic children, inadequate blood circulation in the brain can trigger seizures.	Pre	3.05	0.50	76.25	H	1X2	-3.355	0.001	HS
	Post1	3.58	0.55	89.50	H	1X3	-2.365	0.018	S
	Post2	3.40	0.59	85.00	H	2X3	-2.646	0.008	HS
13. An epileptic child who takes a lot of anticonvulsant medicine may experience more seizures.	Pre	1.90	0.55	47.50	H	1X2	-4.310	0.000	HS
	Post1	1.23	0.42	30.75	H	1X3	-0.513	0.608	NS
	Post2	1.83	0.71	45.75	H	2X3	-4.382	0.000	HS
14. When an epileptic child does not get enough sleep, he may have more seizures.	Pre	1.77	0.48	44.25	L	1X2	-5.610	0.000	HS
	Post1	3.55	0.50	88.75	H	1X3	-5.485	0.000	HS
	Post2	3.35	0.58	83.75	H	2X3	-2.828	0.005	HS
15. The epileptic child should discontinue taking anticonvulsants, because his seizures are controlled.	Pre	3.42	0.71	85.50	L	1X2	-5.554	0.000	HS
	Post1	1.28	0.51	32.00	H	1X3	-5.532	0.000	HS
	Post2	1.32	0.47	33.00	H	2X3	-0.471	0.637	NS

(*) HS: Highly Sig. at $P \leq 0.01$; S: Sig. at $P \leq 0.05$; NS: Non-Sig. at $P \geq 0.05$; Testing based on repeated Measurement test; Com.: Combination of all probable pair wised. Assess: Assessment, Evaluation Intervals Scoring Scales of Relative Sufficiency Coefficient (RS %): [L: Low (0.00 – 33.33)]; [M: Moderate (33.34 – 66.66)]; [H: High (66.67 – 100)]. Testing is based on McNemar Test. Red color items assigned that a reversed improvement are obtained if the RS% value are given negatively

Table (4) presents summary statistics for Epilepsy's Neurological Domain items in the questionnaire throughout the period (pre, post1, and post2). In the

pre period the levels of beliefs and attitudes of teachers were (low – moderate), while in the post period the levels of beliefs and attitudes of teachers

become (high) as a result of implementing a planned psycho-educational program toward studied teachers in primary schools about epilepsy in children. Most of the study group's items showed a significant improvement and raising the levels of

positive beliefs and attitudes of studied respondents, Significant differences in assessment levels were recorded among pre and post periods or even between pre and post 2 periods at (P.≤ 0.01) statistical significance.

Table 5: Descriptive Statistics for (Epilepsy's Metaphysical Domain) Questionnaire's Items for studied periods of study group (n=40)

Teacher Attitudes toward Children with Epilepsy's Questionnaire's items	Periods	Study Group							
		MS	SD	RS%	Ass.	Comb.	Z-value	P-value	C.S.
1. The prayers can heal a child having epilepsy.	Pre	2.05	0.60	51.25	M	1X2	-4.353	0.000	HS
	Post1	1.28	0.45	32.00	H	1X3	-4.056	0.000	HS
	Post2	1.38	0.49	34.50	H	2X3	-1.414	0.157	NS
2. Epilepsy is caused by a child's destiny.	Pre	2.88	0.52	72.00	L	1X2	-5.528	0.000	HS
	Post1	1.30	0.56	32.50	H	1X3	-5.443	0.000	HS
	Post2	1.40	0.50	35.00	H	2X3	-1.414	0.157	NS
3. A spiritual leader (for example, a priest or pastor) can help an epileptic child more than any other.	Pre	2.60	0.63	65.00	M	1X2	-5.148	0.000	HS
	Post1	1.33	0.47	33.25	H	1X3	-4.827	0.000	HS
	Post2	1.48	0.51	37.00	H	2X3	-1.897	0.058	NS
4. I believe that people's faith in a higher power helps to deal with epilepsy.	Pre	1.95	0.64	48.75	L	1X2	-5.266	0.000	HS
	Post1	3.48	0.51	87.00	H	1X3	-4.896	0.000	HS
	Post2	3.12	0.61	78.00	H	2X3	-3.742	0.000	HS

Table (5) presents summary statistics for Epilepsy's Metaphysical Domain items in the questionnaire throughout the period (pre, post1, and post2). In the pre period the levels of beliefs and attitudes of teachers were (low – moderate), while in the post period the levels of beliefs and attitudes of teachers become (high) as a result of implementing a planned psycho-educational program toward studied

teachers in primary schools about epilepsy in children. Most of the study group's items showed a significant improvement and raising the levels of positive beliefs and attitudes of studied respondents, Significant differences in assessment levels were recorded among pre and post periods or even between pre and post 2 periods at (P.≤ 0.01) statistical significance.

Table 6: Descriptive Statistics for (Epilepsy's Environmental/Psycho Domain) Questionnaire's Items for studied periods of study group (n=40)

Teacher Attitudes toward Children with Epilepsy's Questionnaire's items	Periods	Study Group							
		MS	SD	RS%	Assess	Comb.	Z-value	P-value	C.S. (*)
1. Epilepsy can be transmitted by touching someone who is having a fit.	Pre	1.30	0.46	32.50	H	1X2	-0.243	0.808	NS
	Post1	1.33	0.47	33.25	H	1X3	-1.414	0.157	NS
	Post2	1.45	0.50	36.25	H	2X3	-2.236	0.025	S
2. When an epileptic child spends too much time in the sun, he may get seizures.	Pre	1.38	0.63	34.50	L	1X2	-5.245	0.000	HS
	Post1	2.95	0.64	73.75	M	1X3	-5.288	0.000	HS
	Post2	2.93	0.57	73.25	M	2X3	-0.302	0.763	NS
3. A child's seizures can be triggered by unexpected changes in the weather (such as becoming extremely hot/ cold/ wet).	Pre	2.90	0.63	72.50	M	1X2	-5.368	0.000	HS
	Post1	1.30	0.56	32.50	H	1X3	-5.346	0.000	HS
	Post2	1.40	0.50	35.00	H	2X3	-1.155	0.248	NS
4. When a child is extremely angry about doing something, he gets seizures.	Pre	1.85	0.53	46.25	L	1X2	-5.459	0.000	HS
	Post1	3.03	0.58	75.75	H	1X3	-5.139	0.000	HS
	Post2	3.08	0.57	77.00	H	2X3	-0.577	0.564	NS
5. Traveling in a closed car (with no airflow) can trigger seizures in an epileptic child.	Pre	1.23	0.53	30.75	H	1X2	-3.860	0.000	HS
	Post1	1.82	0.50	45.50	H	1X3	-3.567	0.000	HS
	Post2	1.80	0.56	45.00	H	2X3	-0.277	0.782	NS
6. People may look down (inferior) on an epileptic child.	Pre	3.00	0.55	75.00	L	1X2	-5.531	0.000	HS
	Post1	1.35	0.53	33.75	H	1X3	-5.374	0.000	HS
	Post2	1.45	0.55	36.25	H	2X3	-1.069	0.285	NS
7. When an epileptic child suffers a seizure should call the ambulance.	Pre	2.93	0.66	73.25	M	1X2	-5.483	0.000	HS
	Post1	1.30	0.46	32.50	H	1X3	-5.430	0.000	HS
	Post2	1.38	0.49	34.50	H	2X3	-0.655	0.513	NS
8. A child with epilepsy should be isolated from others.	Pre	1.40	0.50	35.00	H	1X2	-1.414	0.157	NS
	Post1	1.25	0.44	31.25	H	1X3	-0.243	0.808	NS
	Post2	1.43	0.50	35.75	H	2X3	-1.698	0.090	NS
9. The parents of an epileptic child live in a constant state worry that their child will have a seizure at any moment.	Pre	2.95	0.64	73.75	M	1X2	-0.876	0.381	NS
	Post1	3.08	0.53	77.00	H	1X3	-2.043	0.041	S
	Post2	2.70	0.69	67.50	M	2X3	-3.000	0.003	HS
10. To avoid negative effects on other students, children with epilepsy should be kept in a special classroom.	Pre	3.10	0.59	77.50	L	1X2	-5.422	0.000	HS
	Post1	1.28	0.45	32.00	H	1X3	-5.612	0.000	HS
	Post2	1.30	0.46	32.50	H	2X3	-0.277	0.782	NS

Table 6: Continued

11. The epileptic child can swim, whenever accompanied by their parents.	Pre	3.08	0.62	77.00	H	1X2	-2.998	0.003	HS
	Post1	3.53	0.55	88.25	H	1X3	-0.347	0.728	NS
	Post2	3.03	0.70	75.75	H	2X3	-4.264	0.000	HS
12. Parents of epileptic children often find it hard to accept their child's condition.	Pre	2.00	0.55	50.00	M	1X2	-2.711	0.007	HS
	Post1	1.67	0.47	41.75	H	1X3	-3.378	0.001	HS
	Post2	1.50	0.51	37.50	H	2X3	-1.460	0.144	NS
13. All physical activities at school should be done by an epileptic child.	Pre	1.95	0.60	48.75	L	1X2	-5.334	0.000	HS
	Post1	3.63	0.54	90.75	H	1X3	-4.670	0.000	HS
	Post2	3.05	0.68	76.25	H	2X3	-3.819	0.000	HS
14. When an epileptic child has a lot of homework, he gets seizures.	Pre	1.92	0.69	48.00	H	1X2	-3.641	0.000	HS
	Post1	1.38	0.49	34.50	H	1X3	-3.532	0.000	HS
	Post2	1.43	0.50	35.75	H	2X3	-0.577	0.564	NS
15. Certain meals and drink can cause seizures in an epileptic child.	Pre	1.38	0.67	34.50	L	1X2	-5.343	0.000	HS
	Post1	3.15	0.43	78.75	H	1X3	-5.223	0.000	HS
	Post2	2.98	0.53	74.50	H	2X3	-2.646	0.008	HS
16. Herbs or plants are the best health care for an epileptic child (natural medicine).	Pre	2.98	0.70	74.50	M	1X2	-5.578	0.000	HS
	Post1	1.05	0.22	26.25	H	1X3	-5.578	0.000	HS
	Post2	1.05	0.22	26.25	H	2X3	0.000	1.000	NS
17. When an epileptic child is tired or restless with nothing else to do, he experiences seizures.	Pre	3.18	0.78	79.50	L	1X2	-5.494	0.000	HS
	Post1	1.25	0.44	31.25	H	1X3	-5.267	0.000	HS
	Post2	1.50	0.51	37.50	H	2X3	-2.357	0.018	S
18. School can be difficult for a child with epilepsy, for example (he was rejected by his peers in school).	Pre	3.40	0.67	85.00	L	1X2	-5.420	0.000	HS
	Post1	1.87	0.46	46.75	H	1X3	-5.045	0.000	HS
	Post2	2.10	0.59	52.50	M	2X3	-2.496	0.013	S
19. The parents of an epileptic child are hurt because their son has epilepsy.	Pre	2.83	0.71	70.75	M	1X2	-4.995	0.000	HS
	Post1	1.70	0.46	42.50	H	1X3	-3.999	0.000	HS
	Post2	1.95	0.68	48.75	H	2X3	-2.357	0.018	S
20. A physician is the best person to help an epileptic child.	Pre	2.90	0.63	72.50	M	1X2	-3.870	0.000	HS
	Post1	3.50	0.55	87.50	H	1X3	-3.266	0.001	HS
	Post2	3.33	0.53	83.25	H	2X3	-2.333	0.020	S
21. Epileptic students are distinguished from other students by their low Intelligent Quotient.	Pre	3.48	0.60	87.00	L	1X2	-5.641	0.000	HS
	Post1	1.25	0.44	31.25	H	1X3	-5.599	0.000	HS
	Post2	1.38	0.49	34.50	H	2X3	-1.667	0.096	NS
22. Epilepsy is a scary disease.	Pre	3.03	0.66	75.75	L	1X2	-5.370	0.000	HS
	Post1	1.63	0.49	40.75	H	1X3	-5.435	0.000	HS
	Post2	1.40	0.50	35.00	H	2X3	-1.964	0.049	S

Table (6) presents summary statistics for Environmental/Psycho items in the questionnaire throughout the period (pre, post1, and post2). In the pre period the levels of beliefs and attitudes of teachers were (low – moderate), while in the post period the levels of beliefs and attitudes of teachers become (high) as a result of implementing a planned psycho-educational program toward studied teachers in primary schools about epilepsy in children. Most of the study group's items showed a significant improvement and raising the levels of positive beliefs and attitudes of studied respondents, Significant differences in assessment levels were recorded among pre and post periods or even between pre and post 2 periods at ($P \leq 0.01$) statistical significance.

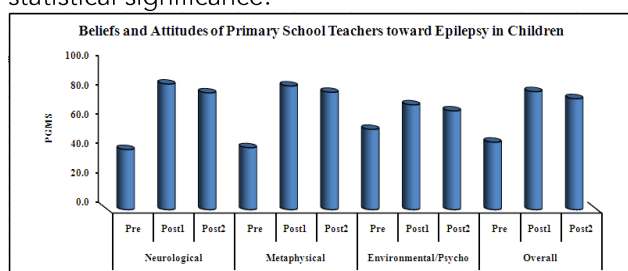


Figure 1: Bar chart for (epilepsy's questionnaire's main domains) for studied periods of study group

Figure (1) Bar Chart represented graphically distributions of epilepsy's questionnaire's main domains (neurological, metaphysical, and environmental/psycho) concerning percentile grand mean of score among study group is refer to low during the pre-test and increased during the post-test1 time and remain increase in post-test 2, which indicate a significant improvement in their beliefs and attitudes after application of psycho-educational program.

4. Discussion

This study that examined at how a psycho-educational program improved primary school teachers' beliefs and attitudes towards epilepsy in children. No previous research has examined the impact of a psycho-educational program on primary school teachers in Kirkuk city. The data obtained was analyzed and interpreted in accordance with the study's objectives. Table (1) shows the analyses of primary school teacher's demographic characteristic ensure both groups are similar, yet there are minor differences between them, this study's findings on demographic characteristics of the sample agree that of Owolabi et al. (2014) [11] there was no significant indicator for any of the variables. of beliefs and attitude among the respondents. Findings show

participant's age group; most of the teacher's ages were between (40-49 years) among the study and control groups, they had the highest percentage. In both groups, middle adult teachers participated in current study. The Present findings disagree with the study under the title " impact of epilepsy training on school teachers and counselors: An intervention study "which conducted by Abou Khaled et al. (2020) [12] in Lebanon who reported that more than one third of the study sample aged were less than 39 years. This is due to the lack of recruitment of teachers were established at late. Respects to the gender, the female teachers were more than male in both studied grouped, because women prefer to work in the educational field. This finding is in agreement with Christian et al. (2015)[13] they found that the majority of participants (68.6%) were female's teachers due to that females prefer working in the field of education. In regard with education qualification, most of the teachers in both groups were graduation from teacher preparing institution. These findings agree with the study " teachers' knowledge about epilepsy and their attitudes toward students with epilepsy: A Niger cross-sectional survey " done by Moussa and Abdoul Kadir (2020) [14], who found that the majority of teachers were married. It is obvious from the findings that the teachers in both groups had more than 16 years of experience, due to the age of participants more than 40 years. These findings supported and agree with the study done by Jobran (2015)[15], who found that teachers had more than 20 years of experience.

Table (2) shows that the subjects of studied "general information", results indicating that most of studied subjects having information regarding epilepsy, and about half of them were answered mass media and university teaching sources, all of them hadn't any participated in a training course on epilepsy, and finally, the most of studied subjects were confirmed existence of epileptic children in their schools. The study's findings are supported by (Kankirawatana, 2000 [16], who analyze the knowledge, attitude, and practice of epilepsy in Thai school teachers, conclude that 38% of participants had never heard of or read concerning epilepsy. As a result, they may also have a number of misconceptions or prejudices about epilepsy, which can negatively impact a child's academic learning and effectiveness. Teachers have a poor awareness and attitude toward epilepsy in overall, according to this study, with the majority of them unqualified to teach epileptic children.

Table (3) shows that the subjects of studied "Specific Information", results indicating that the selected subjects seem to be similar thrown from the same population statistically, and $P > 0.05$ revealed that there were no significant differences between groups studied. Teachers who had past contact with children with these chronic conditions, however, have been the least worried about their students' limits and academic problems, as well as their relationships with colleagues, according to Olson et al. (2004)[17].

Table (4) shows that the majority of teachers had negative beliefs & attitudes regarding epileptic child. The beliefs and attitude of a teacher about epilepsy in children plays a significant influence in this condition, since if the teacher react with fear, it will create terror in the students, but this will be how they deal to epilepsy if it happens. According to Goronga et al. (2013) [9], if a teacher has negative beliefs and attitudes about children with epilepsy, the schoolmates or classmates among those children are doing the same. The results of the screening with regard to studied items concerning the effect of applying psycho-educational programs indicated significant different at $P < 0.01$ toward effectiveness of applying proposed program by increasing the levels of positive beliefs and attitudes of studied participants, which could be used to confirm the program's importance or success. This study focused on the impact of psycho-educational programme on teachers' beliefs & attitudes regarding epileptic child. This study's conclusions revealed that most of the samples in both groups had negative beliefs & attitudes regarding epilepsy prior to beginning the study, which was similar to the findings of Karakis et al. (2014) [18] in Greece. Palli et al. (2015) [19] found that interventions such as psycho-educational programs improve teachers' beliefs and attitudes concerning epilepsy.

5. Conclusion And Recommendations

The majority of the studied group according to age group is between (40-49 years), most of studied sample was female, graduation from teachers preparing institution, most of studied subjects were married, having more than 16 years of experience as a school teacher, and most of studied subjects were from urban residency. There are significant improvements as a result of major changes in beliefs and attitudes levels in domains (neurological, metaphysical, and environmental/psycho and an overall main domains) from pre to post1 or pre to post2 time periods following the application of a psycho-educational program. The study recommends that psycho-educational program should be design on beliefs and attitudes for all teachers in governmental and non - governmental schools in Kirkuk governorate regarding epilepsy in children. As well as evaluation of teachers' beliefs and attitudes toward epilepsy in children should be update periodically.

References

- Ekeh B. C. and Ekrikpo U. E., "The knowledge, attitude, and perception towards epilepsy amongst medical students in Uyo, Southern Nigeria," *Advances in Medicine*, vol. (2015), Article ID 876135, 6 pages.
- WHO- Epilepsy. Geneva: WHO; (2017). Available from: <http://www.who.int/mediacentre/factsheets/fs999/en/>.

- Institute for Health Metrics and Evaluation. (2010). GBD PROFILE: GHANA. Retrieved January 28, 2017, from Healthdata.org: www.healthdata.org/sites/default/files/files/country_profiles/GBD/ihme_gbd_country_report_ghana.pdf.
- David et al., David J. Thurman, Ettore Beghi, Charles E. Begley, Anne T. Berg, Jeffrey R. Buchhalter, Ding Ding, Dale C. Hesdorffer, W. Allen Hauser, Lewis Kazis, Rosemarie Kobau, Barbara Kroner, David Labiner, Kore Liow, Giancarlo Logroscino, Marco T. Medina, Charles R. Newton, Karen Parko, Angelia Paschal, PierreMarie Preux, Josemir W. Sander, Anbesaw Selassie, William Theodore, Torbjörn Tomson, and Samuel Wiebe. Standards for epidemiologic studies and surveillance of epilepsy. *Epilepsia*, 52(SUPPL. 7):2–26, (2012).
- Neville BG: Epilepsy in childhood. *BMJ* (2009); 315: 924-30.
- Ahmed EE, Mohamed IN, Mohammed N. Spectrum of attention deficit hyperactivity disorders (ADHD) among Sudanese children with epilepsy. (2015), Vol. 15, S. Sudan Association of Pediatricians.
- Ngugi et al., Ngugi AK, Bottomley C, Kleinschmidt I, Sander JW, Newton CR. Estimation of the burden of active and life-time epilepsy: A meta-analytic approach. *Epilepsia* (2010); 51:883-90.
- Mohammed IN, and Babikir HE. Traditional and spiritual medicine among Sudanese children with epilepsy. *Sudan J Paediatr* (2013); 13:31-7.
- Goronga et al., Goronga, P., Gatsi, R., Gatahwi, L., Dozva, M. (2013). Primary School teacher's attitudes towards pupils with epilepsy: The Zimbabwean experience and implications for Practice. *American Based Research Journal* 2(4), 41-50. ISSN (2304-7151).
- Zanni KP, Matsukura TS, Maia Filho HDS. Adaptação Transcultural para o Português Brasileiro do Instrumento. The epilepsy beliefs and attitudes scale (EBAS)—adult version. *Journal of Epilepsy and Clinical Neurophysiology*. (2009);15(4):152–164.
- Owolabi et al., Owolabi, L.F., Shehu, N.M., Owolabi, S.D. Epilepsy Education in developing countries: a survey of school teachers' knowledge about epilepsy and their attitude towards students with epilepsy in Northwestern Nigeria. *Pan African Medical Journal*, (2014). 18 (255).
- Abou Khaled et al., Karine J. Abou Khaled a, Michella I. Ibrahim a, Ronald F. Moussa b. Impact of epilepsy training on school teachers and counselors: An intervention study in Lebanon. *Epilepsy & Behavior Reports* 14 (2020) <https://doi.org/10.1016/j.ebr.2020.100365>.
- Christian et al., Christian N. Eze, Olufunke M. Ebuehi, Francesco Brigo, Willem M. Otte, Stanley C. Igwe. Effect of health education on trainee teachers' knowledge, attitudes, and first aid management of epilepsy: An interventional study. *Epub* (2015) Nov 1; 33:46-53. doi: 10.1016/j.seizure.2015.10.014.
- Moussa and Abdoul Kadir, Moussa Toudou-Daouda, Abdoul Kadir IbrahimMamadou. Teachers' Knowledge About Epilepsy and Their Attitudes Toward Students with Epilepsy: A Cross-Sectional Survey in the City of Tahoua (Niger) *Neuropsychiatric Disease and Treatment*: (2020).16 2327–2333.
- Jobran M. Alqahtani. Knowledge and practice of schoolteachers towards students with epilepsy in Khamis Mushate, Southern Saudi Arabia. *Journal of Family and Community Medicine*. (2015). Vol. 22, Issue 3.
- Kankirawatana P. Epilepsy awareness among school teachers in Thailand. *Epilepsia* (2000); 40(4):497-501.
- Olson et al., A. L. Olson, A. B. Seidler, D. Goodman, S. Gaelic, and R. Nordgren, "School professionals' perceptions about the impact of chronic illness in the classroom," *Archives of Pediatrics and Adolescent Medicine*. (2004). Vol. 158, no. 1, pp. 53–58.
- Karakis et al., Karakis I, Cole AJ, Montouris GD, San Luciano M, Meador KJ, Piperidou C. Caregiver burden in epilepsy: Determinants and impact. *Epilepsy Res Treat*. (2014):808421. doi: 10.1155/2014/808421.
- Palli et al., Palli A, Kontoangelos K, Richardson C, Economou MP. Effects of Group Psychoeducational Intervention for Family Members of People with Schizophrenia Spectrum Disorders: Results on Family Cohesion, Caregiver Burden, and Caregiver Depressive Symptoms. *Int J Ment Health*. (2015); 44(4):277–89. doi: 10.1080/00207411.2015.1076291.